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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,680	02/20/2004	Naoto Sen	107101-00052	5545

7590 03/17/2006

ARENT FOX KINTNER PLOTKIN & KAHN, PLLC  
Suite 400  
1050 Connecticut Avenue  
Washington, DC 20036-5339

EXAMINER

VANAMAN, FRANK BENNETT

ART UNIT	PAPER NUMBER
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3618

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/781,680

Applicant(s)

SEN ET AL.

Examiner

Frank Vanaman

Art Unit

3618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/24/04</u> . | 6) <input type="checkbox"/> Other: ____.  |

**Priority**

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

**Claim Rejections - 35 USC § 102**

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 8, 9, 11, 12, 14, 19, 20 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Iizuka (US 4,188,933). Iizuka teaches a vehicle having an engine operation controller (e.g., 7, 8, 9, 10, 11) that performs an operational step of switching the engine between full and partial cylinder operation, and a running controller (e.g., 1, 2, 3, 4, 5, 6) that conducts overall running of the engine portion of the vehicle, wherein a deceleration determination by the running controller switches the engine from partial cylinder to full cylinder mode in order to deliver engine braking, when (a) a brake operator is held for a time (col. 2, lines 25-26) or (b) an accelerator is returned (e.g., by a user removing his/her foot therefrom), or under the condition that a light load (throttle angle less than a threshold) and a brake pedal are operated (col. 4, lines 19-28), and wherein, if the engine is operated in a full cylinder condition and a loading which does not require braking and does not require full cylinder operation is encountered, the engine is switched to partial cylinder operation.

**Claim Rejections - 35 USC § 103**

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3618

5. Claims 2, 6, 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over lizuka in view of Jindo et al. (US 6,665,603). lizuka teaches a vehicle having an engine operation controller that performs an operational step of switching the engine between full and partial cylinder operation, and a running controller that conducts overall running of the engine portion of the vehicle, wherein a deceleration determination by the running controller switches the engine from partial cylinder to full cylinder mode in order to deliver engine braking. lizuka fails to teach the deceleration determination as being associated with a speed and/or distance control device which determines a deceleration condition associated with a comparison of velocity of the vehicle and another value under a preceding vehicle following operation. Jindo et al. teach a control for a vehicle which includes a following mode, wherein speed control of the vehicle compares the vehicle speed (V) with a predetermined value (Vs and/or V\*) to determine a need for deceleration. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the vehicle taught by lizuka with a following control arrangement such as taught by Jindo et al. for the purpose of easing the effort required of the driver, and to additionally link a deceleration request made by the arrangement of Jindo et al. to the braking determination element taught by lizuka for the purpose of allowing the following arrangement access to the enhanced braking mode (i.e., control of engine cylinders) taught by lizuka, thus facilitating better control of the vehicle.

6. Claims 2, 4, 5, 7, 13, 15, 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over lizuka in view of Guest (US 6,193,333). lizuka is discussed above and fails to teach the deceleration determination as being associated with a speed and/or distance control device which determines a deceleration condition associated with a comparison of velocity and/or change in velocity of the vehicle with target velocity and change of velocity values, and a road gradient. Guest teaches a vehicle control device, which can be activated by a driver under the condition of a road gradient determination made by the driver, which determines a target value (v) and controls the vehicle speed to match the target by requesting braking (col. 3, lines 9-13) on a road having a gradient of sufficient pitch to warrant the engagement of the operation by the

Art Unit: 3618

user. The reference to Guest fails to explicitly disclose comparison of the vehicle speed to the target value, only disclosing controlling of the vehicle speed to meet the target. In view of the need for the control system to have the vehicle speed information available to make a valid comparison, it is understood to be either (a) inherent that vehicle speed is determined and used in the comparison, or (b) obvious to determine vehicle speed from other operational data in order to ensure that the controlling arrangement is functional. It would have been obvious to one of ordinary skill in the art at the time of the invention to include in the vehicle of Iizuka a vehicle target speed comparison device which controls a vehicle speed to a target value, and which is operational under the condition of a road gradient being less than a threshold value determined by the user in engaging the arrangement, to the breadth claimed, for the purpose of easing the effort required of the driver when traversing a slope, and to additionally link a deceleration request made by the arrangement of Guest to the braking determination element taught by Iizuka for the purpose of allowing the control arrangement access to the enhanced braking mode (i.e., control of engine cylinders) taught by Iizuka facilitating better control of the vehicle.

While Guest fails to teach the use of change of velocity values, the use of time derivatives of speed (i.e., acceleration) is very old and well known in control systems for the purpose of improving accuracy of operation, and as such, it would have been obvious to one of ordinary skill in the art at the time of the invention to additionally use a change of velocity value as a target change of velocity with the vehicle of Iizuka as modified by Guest for the purpose of improving the accuracy and responsiveness of the control arrangement.

7. Claims 10 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iizuka in view of Isogai et al. (US 6,594,574). Iizuka is discussed above and fails to teach the deceleration determination as being associated with a fuel-cut control device which determines a deceleration condition. Isogai et al. teach a vehicle control arrangement and process wherein under a desired deceleration condition, a fuel-cut mode is engaged (figure 6, S915; also note figure 9 and col. 9, lines 42-50). It would have been obvious to one of ordinary skill in the art at the time of the invention include

Art Unit: 3618

in the vehicle of Iizuka a controller having a fuel cut mode as taught by Isogai et al. which is engaged when a degree of deceleration is required, and further connect the deceleration request made by the arrangement of Isogai et al., which requires a fuel cut mode, to the braking determination element taught by Iizuka for the purpose of allowing the deceleration arrangement access to the enhanced braking mode (i.e., control of engine cylinders) taught by Iizuka, thus facilitating better control of the vehicle.

### **Conclusion**

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gilbert (US 4,151,824), Nishimura et al. (US 5,594,645), Shehan et al. (US 6,122,588), Tange et al. (US 6,505,111), Minowa et al. (US 6,564,137), and Nishira et al. (US 6,597,981) teach vehicle controls of pertinence.

9. Any inquiry specifically concerning this communication or earlier communications from the examiner should be directed to F. Vanaman whose telephone number is 571-272-6701.

Any inquiries of a general nature or relating to the status of this application may be made through either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

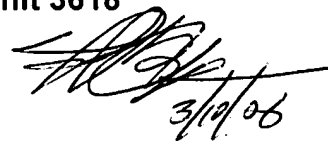
A response to this action should be mailed to:

Mail Stop \_\_\_\_\_  
Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450,

Or faxed to:

PTO Central Fax: 571-273-8300

**F. VANAMAN**  
**Primary Examiner**  
**Art Unit 3618**



3/14/06